Document made available under the Patent Cooperation Treaty (PCT)

International application number: PCT/IL05/000079

International filing date: 23 January 2005 (23.01.2005)

Document type: Certified copy of priority document

Document details: Country/Office: US
                    Number: 60/557,381
                    Filing date: 30 March 2004 (30.03.2004)

Date of receipt at the International Bureau: 03 March 2005 (03.03.2005)

Remark: Priority document submitted or transmitted to the International Bureau in
           compliance with Rule 17.1(a) or (b)

PA 1280674

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE

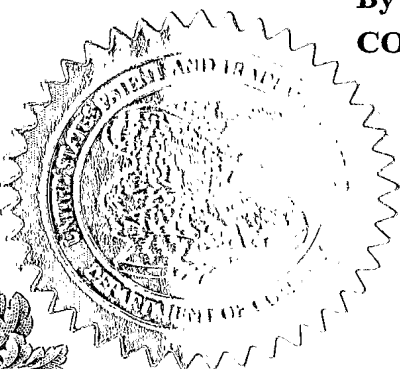United States Patent and Trademark Office

February 09, 2005

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE UNDER 35 USC 111.

APPLICATION NUMBER: *60/557,381*
FILING DATE: *March 30, 2004*

By Authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS

T. LAWRENCE
Certifying Officer

PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No.	

INVENTOR(S)		
Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
GUY	FLEISHMAN	ISRAEL

☒ Additional inventors are being named on the _____ separately numbered sheets attached hereto

TITLE OF THE INVENTION (500 characters max)
METHOD and SYSTEM FOR COMPRESSING, STORAGE AND RECONSTRUCTION OF SPEECH WITH REDUSED STORAGE VOLUME.

Direct all correspondence to: CORRESPONDENCE ADDRESS

☐ Customer Number [Type Customer Number here] ➡ *Place Customer Number Bar Code Label here*

OR

☒ Firm or Individual Name	GUY FLEISHMAN MONO
Address	2 MIFRAZ SHLOMO
Address	
City	HOLON State ZIP 58498
Country	ISRAEL Telephone 9723 5566233 Fax

ENCLOSED APPLICATION PARTS (check all that apply)

☒ Specification   Number of Pages   **2**   ☐ CD(s), Number

☐ Drawing(s)   Number of Sheets   ☐ Other (specify)

☐ Application Data Sheet. See 37 CFR 1.76

METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT

☒ Applicant claims small entity status. See 37 CFR 1.27.
☐ A check or money order is enclosed to cover the filing fees

☐ The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number:

☒ Payment by credit card. Form PTO-2038 is attached.

FILING FEE AMOUNT ($)

$80—

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.
☒ No.
☐ Yes, the name of the U.S. Government agency and the Government contract number are: _____

Respectfully submitted,

SIGNATURE _____ [signature]

TYPED or PRINTED NAME GUY FLEISHMAN

TELEPHONE 972-3-5566233

Date **25/3/04**

REGISTRATION NO.
(if appropriate)
Docket Number:

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

PROVISIONAL APPLICATION COVER SHEET
Additional Page

Docket Number	

INVENTOR(S)/APPLICANT(S)		
Given Name (first and middle [if any])	Family or Surname	Residence (City and either State or Foreign Country)
GUY	FLEISHMAN	HOLON ISRAEL
ALECSANDER	WEISMANN	RISHON ISRAEL
LEONID	CHERNIAK	HOLON ISRAEL

Number _____ of _____

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

Method and System for compressing, storage and reconstruction of speech with reduced storage volume.

Introduction

The invention provides system, apparatus, and method for compressing a audio and speech signal, storage and reconstruction of quality speech with minimal storage volume or transmission bandwidth requirements.
At present there are a several kinds of systems that are proposed for speech compressing and recording. From one side there are apparatus with a big memory size and powerful and not cheep processors (For example Flash Disk used as managers tape). Those systems have large memory and can store big files of speech data. The disadvantage of those systems is relatively high price. From the other side there are relatively cheep and simple systems that used for recording short speech or audio (1 minute) and can't save big files.
The invention enables to save long time speech recordings in a relatively small memory size. The invention implements relatively simple and cheep system and method to convert, compress, store and reconstruct speech signals. The invention can be used in variety of applications like blessing speaking cards, blind cards, tape recorders, voice mail, baby toys and others...

Description

This invention provide an improved technique for reducing the storage volume for the audio data. This invention provide a compression scheme for audio data which reduces the storage requirement of the data. This invention provide a low cost solution for storage and reproduction of the audio data.
The invention based on system that include two hardware devices and software algorithm. The objects of the invention are system and method that converts audio signal to digital representation, saves the results in memory and enables simple reproduction of audio signal on user demand.
The invention uses new method to transform speech to the digital data. This is done without measuring and preserving the amplitude of the harmonies of the analog signals.

The system is implemented by following description but other options like ASIC or different hardware and software blocks are also possible.
For example one implementation of the system build of two hardware parts:
  1. Microphone part
  2. Memory part

The Microphone part consist of:
  a. Microphone
  b. Amplifier
  c. Comparator
  d. Auxiliary hardware
The microphone transforms audio to analog signal which is amplified with amplifier and pass comparator that transforms the signal to the impulse form.

1

Guy F. MONO GARD   Provisional application 010

The Memory part consist of:
 a. micro controller
 b. memory
 c. amplifier with filter
 d. speaker
 e. additional hardware

Most of this part (except speaker circuit) can be implemented in digital ASIC. Special software algorithm is used to implement the method and control the system.

The impulse signal from the Microphone part transferred to the micro controller circuit where it is sampled at a defined rate (about 8-10 kb per second). The samples are recorded in memory by using serial memory protocol. This method enables speech of one second be occupy only 8-10 kb or one Kbytes of memory. Compared to basic speech digital conversion technique that uses 64 kbit per second or 8 Kbytes of memory per second.

At the reproduction when the power switched on the Memory part, it begin to work in the reproduction mode. With the same sample frequency the converted audio data from the memory entered to the micro controller circuit and outputted to the amplifier and filter circuit. The output is transformed to the analog signal for the audio reproduction in the speaker.

The scope of this invention include different implementations and applications and not limited only to the given examples.

2